

CLAIMS

1. An electronic information backup system, comprising:
electronic wallet means for management of electronic
value information,

electronic safe means for generating and issuing a registration certificate by accepting registration of an electronic value information and extracting the corresponding electronic value information through presentation of said registration certificate,

electronic safe storage means that is the intrinsic storage area of the electronic safe means for holding said electronic value information corresponding to said registration certificate,

electronic information registration means for acquiring said registration certificate by registering said electronic value information to said electronic safe means, and

electronic information recovery means for acquiring said electronic value information by presenting said registration certificate to said electronic safe means,

wherein, said electronic information registration means acquires the corresponding registration certificate by registering the electronic value information obtained from said electronic wallet means to said electronic safe means and then registers said registration certificate to said electronic wallet means, and

said electronic information recovery means acquires the corresponding electronic value information by presenting said

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registration certificate obtained from said electronic wallet means to said electronic safe means to recover said information on said electronic wallet means.

2. An electronic information backup system according to claim 1, wherein said electronic safe means generates a registration certificate including the partial information of the electronic value information requesting the registration.

3. An electronic information backup system according to claim 1, wherein the electronic value information can be registered to a plurality of electronic safe means by generating a registration certificate including the own pointer information with said electronic safe means.

4. An electronic information backup system according to any one of the claims 1 to 3, comprising a key storage means for storing a set of an encryption key and a decoding key and an encrypting/decoding means for executing the encryption of said electronic value information using the encryption key and also executing the decoding using said decoding key,

wherein said electronic information registration means registers the encryption electronic value information obtaining by encrypting the electronic value information obtained from said electronic wallet means with said encrypting/decoding means to said electronic safe means in order to obtain the encryption electronic value information registration certificate and said electronic information recovery means obtains the corresponding encryption electronic value information by presenting said encryption electronic value information registration certificate to said electronic safe

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5. An electronic information backup system according to claim 4, wherein said electronic information registration means acquires a key registration certificate by obtaining a key information from said key storage means and registering this information to said electronic safe means and said electronic information recovery means acquires the corresponding key information by presenting said key registration certificate to said electronic safe means and then recovering said obtained key information on said key storage means.

6. An electronic information backup system according to claim 4, wherein a decoding key for decoding said encrypted electronic value information is registered to the other electronic safe means different from said electronic safe means to acquire the key registration certificate and said electronic information recovery means acquires the corresponding key information by presenting said key registration certificate to said other electronic safe means and then recovering said obtained key information to said key storage means.

7. An electronic information backup system according to claim 4, comprising an electronic information dividing means for dividing said electronic value information to the desired number of partial electronic information pieces to which an identifier for recovering said electronic value information to the original electronic value information is respectively added and an electronic information combining means for recovering

wherein said electronic information registration means acquires a plurality of partial electronic information pieces by requesting division of said electronic value information to said electronic information dividing means and also acquires respective partial information registration certificates by registering the entire part or a part of said partial electronic information to the electronic safe means, said electronic information recovery means acquires respective corresponding partial electronic information pieces by presenting the entire part or a part of said partial information registration certificates to the electronic safe means that has issued the respective partial information registration certificates, and said electronic information combining means recovers said electronic value information from said obtained partial electronic information pieces.

8. An electronic information backup system according to claim 7, wherein said electronic information registration means acquires a plurality of encryption-divided electronic information by respectively encrypting, with the encrypting/decoding means, a plurality of divided electronic information pieces divided with the electronic information dividing means and also acquires the corresponding registration certificates by registering, to the electronic safe means, the entire part or a part of a plurality of obtained encryption-divided electronic information pieces.

9. An electronic information backup system according to

claim 7, wherein said electronic information registration means acquires an encryption electronic information by encrypting the electronic value information with said encrypting/decoding means, also acquires a plurality of division-encrypted electronic information using said electronic information dividing means from said acquired encryption electronic information and also acquires the corresponding registration certificate by registering the entire part or a part of a plurality of said division-encrypted electronic information pieces to the electronic safe means.

10. An electronic information backup system according to claim 7, comprising an electronic information coupling means for coupling a plurality of electronic value information pieces to output one coupled electronic information and an electronic decoupling means for dividing said coupled electronic information to a plurality of original electronic information pieces,

wherein said electronic information coupling means generates the coupled electronic information from a set of a plurality of electronic value information pieces, said electronic information registration means acquires the corresponding coupled electronic information registration certificate by registering said coupled electronic information to said electronic safe means, said electronic information recovery means acquires the corresponding coupled electronic information from the electronic safe means by presenting said coupled electronic information registration certificate and said electronic information decoupling means acquires a set of

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a plurality of said electronic value information pieces from said coupled electronic information.

11. An electronic information backup system according to claim 10, wherein said electronic information dividing means divides the key information obtained by said electronic information registration means from said key storage means into a plurality of partial keys, said encrypting/decoding means acquires the encryption electronic information by encrypting the electronic value information obtained by said electronic information registration means from said electronic wallet means, said electronic information coupling means acquires the coupled electronic information from said encryption electronic information and the partial key group A as a part of said partial key, said electronic information registration means acquires the corresponding registration certificate by registering said coupled electronic information and the partial key group B as the remaining partial key to different electronic safe means respectively, said electronic information recovery means acquires said coupled electronic information and said partial key group B by presenting said registration certificate to the corresponding electronic safe means, said electronic information decoupling means isolates said coupled electronic information to said encryption electronic information and said partial key group A, said electronic information combining means combines said partial key group A and said partial key group A to generate a key information, said encrypting/decoding means decodes said encryption electronic information and acquires said electronic value information, and said electronic

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12. An electronic information backup system according to claim 11, wherein said electronic information dividing means sets the partial key obtained by dividing the key information with the original information to generate a pair of keys of the encryption key and the decoding key.

wherein said electronic information registering means acquires the corresponding encryption seed information registration certificate by registering said encryption seed information to said electronic safe means, said electronic information recovery means acquires the corresponding encryption seed information from said electronic safe means by presenting said encryption seed information registration certificate, said encrypting/decoding means generates the decoding key by multiplying said encryption seed information with said decoding key generation algorithm and said electronic information recovery means decodes said electronic value information obtained by said electronic information recovery means using said decoding key.

14. An electronic information backup system according to

wherein said electronic information registration means registers a set of said electronic value information and the owner authentication information obtained from said owner authentication information input means to said electronic safe means and said electronic information recovery means can acquire said electronic value information when collation with said owner authentication information is completed successfully by presenting the owner information obtained from said owner information input means to said electronic safe means.

wherein authentication is performed by presenting the owner information inputted from said owner information input means to said owner authentication means, forming an encryption communication path between said electronic information registration means and electronic safe means using the

authentication result, said electronic information registration means registers said electronic value information to the electronic value information through said encryption communication path, said electronic safe means holds a set of the owner authentication information corresponding to said authentication result and said electronic value information to the electronic safe means and said electronic information recovery means acquires, through said encryption communication path, said electronic value information corresponding to said owner authentication information corresponding to said authentication result.

16. An electronic information backup system according to claim 15, wherein said owner information input means and owner authentication means generate a common key to use temporarily and hold in common and thereafter encrypt the owner information with said common key to send the encrypted owner information to the owner authentication means.

17. An electronic information backup system according to claim 6, wherein said owner information input means encrypts the owner information with the public key corresponding to an intrinsic secret key of the owner authentication means and said owner information input means sends the encrypted owner information to the owner authentication means.

18. An electronic information backup system according to any one of claims 1, 4, 6, 7, 10 and 11, comprising an authentication device read means for reading an authentication device used for the owner authentication, an authentication check means for inspecting legitimacy of said authentication

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device and an authentication check information storage means for storing the information to be compared for checking legitimacy of said authentication device with said authentication check means, whereby the authentication device connected to said authentication device read means and the authentication check means mutually check the legitimacy.

19. An electronic information backup system according to any one of claims 1, 4, 6, 7, 10 and 11, comprising an authentication device read means for reading an authentication device used for owner authentication, an authentication check means for inspecting legitimacy of said authentication device and an authentication check information storage means for holding information to be compared for checking legitimacy of said authentication device with said authentication check means,

wherein said authentication device connected to said authentication device read means and authentication check means mutually check the legitimacy, an encryption communication path is formed between the electronic information registration means and electronic safe means using the authentication result, the electronic information registration means registers the electronic value information to the electronic safe means via said encryption communication path, said electronic safe means stores a set of the owner authentication information corresponding to said authentication result and said electronic value information to the electronic safe storage means and said electronic information recovery means acquires said electronic value information corresponding to said owner authentication information corresponding to said authentication result via

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20. An electronic information backup system according to any one of claims 1, 4, 6, 7, 10, 11, 14, 15, 18, 19, comprising a backup condition storage means for storing the condition information for backup of the electronic value information and a backup object extraction means for selecting the backup object from said electronic wallet means by interpreting the backup condition obtained from said backup condition storage means,

21. An electronic information backup system according to claim 20, wherein if sufficient capacity is not left on the electronic wallet storage means when the electronic information recovery means presents the registration certificate to recover the corresponding electronic value information on the electronic wallet means or to register a new electronic value information on the electronic wallet means, the electronic information registration means acquires the corresponding registration certificate by selecting the electronic value information of the backup object from said electronic wallet means using said backup object extraction means and then registering such information to said electronic wallet safe means, a vacant capacity is expanded by deleting said electronic value information as the backup object from said electronic wallet storage means, and when the sufficient vacant capacity is reserved, the electronic information is recovered on said

22. An electronic information backup system according to claim 6, wherein when the owner authentication to the other electronic safe means registering said decoding key is completed successfully, said other electronic safe means acquires the encryption electronic information through the communication with the electronic safe means having registered the electronic value information other than said decoding key and said electronic information recovery means acquires said encrypted electronic value information from the other electronic safe means and then recovers such electronic value information on said electronic wallet means..

24. An electronic information backup system according to

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any one of claims 1 to 23, wherein if sufficient capacity for information recovery is not remained on the electronic wallet means when said electronic information recovery means presents the registration certificate to recover the corresponding electronic value information on the electronic wallet means or registers a new electronic value information on the electronic wallet means, shortage of capacity is presented to a user to suspend the recovery job.

25. An electronic informationbackup system according to any one of claims 1 to 24, wherein said electronic information registration means acquires the corresponding registration certificate by registering the electronic value information obtained from said electronic wallet means to said electronic safe means and deletes, when said registration certificate is normally registered to said electronic wallet means, said electronic value information from said electronic wallet means.

26. An electronic informationbackup system according to any one of the claims 1 to 25, wherein said electronic information recovery means acquires the corresponding electronic value information from said electronic safe means by presenting the registration certificate obtained from said electronic wallet means and deletes, when said electronic value information is normally recovered on the electronic wallet means, said registration certificate from said electronic wallet means and also deletes said electronic value information from said electronic safe means.

27. An electronic informationbackup system, comprising a backup system that acquires a registration certificate by

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registering an electronic value information to an external server, stores said electronic value information and registration certificate to a storage medium and recovers the electronic value information by presenting the registration certificate to said external server.

28. An electronic informationbackup system according to claim 17, wherein said registration certificate includes partial information of the electronic value information.

29. An electronic informationbackup system, comprising a backup means for acquiring an encryption electronic value information by encrypting the electronic value information requested for registration using an encryption key and said encryption electronic value information is then registered to the external server.

30. An electronic informationbackup system, comprising a backup means for acquiring the corresponding encryption electronic value information by presenting the registration certificate requested for recovery to the external server and recovers said encryption electronic value information to the electronic value information using the decoding key.

31. An electronic informationbackup system, comprising a backup means that acquires a plurality of partial electronic information pieces by dividing the electronic value information requested for registration, also acquires the partial information registration certificates in the same number as said partial electronic information pieces by registering all partial electronic information pieces to the desired number of external servers and also stores all partial information

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registration certificates to a storage memory.

32. An electronic information backup system according to claim 31, wherein all partial information registration certificates are presented to the external server to acquire the same number of partial electronic information pieces and said all partial electronic information pieces are combined to recover the original electronic value information and then to be stored in said storage medium.

33. An electronic information backup system, comprising a backup means that acquires the encryption electronic value information by encrypting the electronic value information with the encryption key corresponding to the decoding key, forms a plurality of partial decoding keys by dividing said decoding key, acquiring the coupled electronic information by coupling one or more partial decoding keys and said encryption electronic value information, also acquiring the coupled registration certificate by registering said coupled electronic information to the external server, registering the remaining partial decoding keys to the other external server and then storing said coupled registration certificate to a storage medium.

34. An electronic information backup system according to claim 33, wherein said coupled electronic information is acquired by presenting said coupled registration certificate to said external server, said coupled electronic information is decoupled into said encryption electronic value information and one or more partial decoding keys, said remaining partial decoding keys are acquired from said other external server, said decoupled partial decoding keys and said obtained partial

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decoding keys are combined to recover the original decoding key and said encryption electronic value information is recovered to the original electronic value information using said recovered decoding key and is then stored in said storage medium.

35. An electronic informationbackup system according to any one of claims 27 to 34, wherein when the registration certificate corresponding to the electronic value information is acquired from the external server, said electronic value information corresponding to said registration certificate is deleted from said storage medium.

36. An electronic informationbackup system according to any one of claims 27 to 35, wherein the electronic value information as the backup object is selected from said storage medium by interpreting the preset backup condition and said selected electronic value information is automatically registered to said external server to acquire the corresponding registration certificate.

37. An electronic informationbackup system according to any one of claims 27 to 36, wherein a set of the authentication information and electronic value information is registered to said external server.

38. An electronic informationbackup system according to claim 37, wherein said electronic value information can be acquired when the input owner information is presented to said external server and the input owner information is matched with the authentication information registered to said external server.

39. An electronic informationbackup system according to

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40. An electronic information backup system according to claim 39, wherein the electronic value information corresponding to said owner information can be acquired by forming the encryption communication path for said external server when said owner information is matched with said owner authentication information.

42. An electronic information backup system according to claim 41, wherein the electronic value information corresponding to said authentication information is acquired by forming an encryption communication path to said external server when legitimacy of said authentication information is checked.

43. An electronic information backup system according to any one of claims 27 or 36, wherein when the owner authentication to the other external server registering the decoding key is completed successfully, said other external server makes communication with the external server registering the

44. An electronic information backup system according to claim 43, wherein after said encryption electronic information is acquired and is then decoded, said electronic value information is encrypted using a new encryption key, said encryption electronic information is registered to said external server and simultaneously the decoding key is registered to the other external server.